

REMARKS

The Office Action mailed April 2, 2004 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Initially, Applicant respectfully submits that the mailing date on the cover sheet is incorrect. Specifically, the mailing date listed on the cover sheet is April 2, 2004. However, the Office Action, at page 4, was not signed by Examiner Casaregola until April 5, 2004. Moreover, the mailing stamp indicates that the Office Action was not mailed until June 02, 2004. Attached, please find copies of the cover sheet, page 4 of the Office Action, and a copy of the mailing stamp.

Claims 6-19 are now pending in this application. Claims 6-19 stand rejected.

The rejection of Claims 6-19 under 35 U.S.C. § 112 is respectfully traversed. Specifically, Claims 6 and 13 have each been amended to remove references to the positional language describing the pulsator as being “between said controller and the fuel manifold”. For the reasons set forth above, Applicant respectfully requests that the Section 112 rejections of Claims 6-19 be withdrawn.

The rejection of Claims 6-19 under 35 U.S.C. § 102(b) as being anticipated by Stickler et al. (U.S. Pat. No. 5,349,811) is respectfully traversed.

Stickler et al. describe a pulsed fuel injection system for reducing NO_X emissions. The system includes a plurality of fuel injectors 11 which are supplied fuel through a conduit 13 which incorporates a flow pulsing means 14 for periodically introducing a flow pressure variation into flow conduits 13. The amplitude of the fuel flow modulation is correlated to the amplitude of the combustion pressure oscillation, or to the combustor-plenum pressure differential oscillation, or to the magnitude of light emission oscillation, or to the degree of NO_X control by using sensors 20 and a control means 19. More specifically, sensors 20 provide a continuous feedback control for regulating the degree or amplitude of the fuel flow and the frequency of the fuel pulsation to produce the desired result.

Claim 6 recites a combustion control system for controlling a turbine engine including a fuel manifold and a plurality of fuel injectors, wherein the control system includes “a fuel

pulsator in flow communication with said plurality of injectors, and said fuel manifold...a controller coupled to said fuel pulsator, said controller variably selectable and configured to facilitate promoting stable combustion without receiving continuous feedback from a combustor.”

Stickler et al. do not describe or suggest a combustion control system for controlling a turbine engine as recited in Claim 6. Specifically, Stickler et al. do not describe or suggest a control system including a controller coupled to a fuel pulsator, wherein the controller is variably selectable and configured to facilitate promoting stable combustion without receiving continuous feedback from a combustor. Rather in contrast to the present invention, Stickler et al. describe controlling the pulsator by using sensors to provide a continuous feedback control for regulating the degree or amplitude of the fuel flow and the frequency of the fuel pulsation. Emission control is further described as being optimized by feedback looping of fuel flow modulation timing from combustor dynamic response. For the reasons set forth above, Claim 6 is submitted to be patentable over Stickler et al.

Claims 7-12 depend, directly or indirectly, from independent Claim 6. When the recitations of Claims 7-12 are considered in combination with the recitations of Claim 6, Applicant submits that dependent Claims 7-12 likewise are patentable over Stickler et al.

Claim 13 recites a gas turbine engine including “a combustor defining combustion chamber...a fuel manifold...a plurality of fuel injectors in flow communication with said fuel manifold, said fuel injectors configured to supply fuel to said combustion chamber...a fuel control system coupled to said fuel manifold and said fuel injectors, said fuel control system comprising a fuel pulsator and a controller, said fuel pulsator in flow communication with said fuel manifold, said controller coupled to said fuel pulsator such that said controller does not receive a continuous feedback signal from said combustor.”

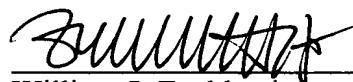
Stickler et al. do not describe or suggest a gas turbine engine as recited in Claim 13. Specifically, Stickler et al. do not describe or suggest a fuel control system including a fuel pulsator and a controller coupled to the fuel pulsator such that the controller does not receive a continuous feedback signal from a combustor. Rather in contrast to the present invention, Stickler et al. describe controlling the pulsator by using sensors to provide a continuous feedback control for regulating the degree or amplitude of the fuel flow and the frequency of the fuel pulsation. Emission control is further described as being optimized by feedback

looping of fuel flow modulation timing from combustor dynamic response. For the reasons set forth above, Claim 13 is submitted to be patentable over Stickler et al.

Claims 14-19 depend, directly or indirectly, from independent Claim 13. When the recitations of Claims 14-19 are considered in combination with the recitations of Claim 13, Applicant submits that dependent Claims 14-19 likewise are patentable over Stickler et al.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



William J. Zychlewicz
Registration No. 51,366
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070